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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,278	02/09/2004	Yoshiteru Yasuda	2004_0196A	8575

513 7590 08/18/2004

WENDEROTH, LIND & PONACK, L.L.P.  
2033 K STREET N. W.  
SUITE 800  
WASHINGTON, DC 20006-1021

EXAMINER

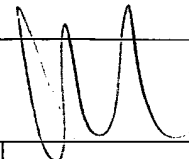
CHANG, CHING

ART UNIT PAPER NUMBER

3748

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/773,278	<b>Applicant(s)</b> YASUDA ET AL. 	
	<b>Examiner</b> Ching Chang	<b>Art Unit</b> 3748	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>05/06/04</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 8 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

More specifically, both "diamond-like" in claim 8 and "such as" in claim 12 render the claimed subject matter indefinite.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. ***Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US Patent 6,032,630) in view of Nakajima et al. (US Patent 5,389,452).***

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Yamamoto discloses a lash adjuster in a valve gear comprising a nut member (11, 12) provided on a lifter (6) body axially slidably mounted in a transmission path for a valve opening/closing force transmitted from a cam (5) to a valve (3) through a valve stem (3a), an adjuster screw (13) moving axially rotating in said nut member for automatically adjusting a valve clearance, and an elastic member (15) for axially biasing said adjuster screw, wherein female threads of said nut member and male threads formed on the outer periphery of said adjuster screw are serration-shaped such that the flank angle of pressure flanks (18) acted on by axial push-in force applied to said adjuster screw is greater than the flank angle of clearance flanks (19).

Yamamoto discloses the invention as recited above, however, fails to disclose the said screw or nut being made by a material which will not react with organic molybdenum.

The patent to Nakajima on the other hand, demonstrates that it is conventional in the art of aluminum alloy, to utilize the aluminum alloy, a nonferrous metal, coated with a lubricant containing organic molybdenum

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the aluminum alloy as taught by Nakajima to make the said screw and nut in the Yamamoto device, since the use thereof would provide a better friction and wear resistance valve lash adjuster.

**5. Claims 3, 5-7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Nakajima (as applied to claim 1 above), and further in view of Anno et al. (US Patent 5,204,890).**

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The modified Yamamoto device, however, fails to disclose an alternative way of using a ceramic film formed on one or both of said adjuster screw and said nut member, or on the pressure side thread surfaces of one or both of them.

The patent to Anno on the other hand, teaches that it is conventional in the art of ceramic film, to utilize a ceramic film of nitride (Examples 3, 5, 11, 19, and 22), or a carbon film (Examples 5, 7, 9, 12, 15, 17, and 20), or an oxide film (Example 7), or a titanium nitride film formed on a bearing surface (25) of a rotating structure (12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the ceramic film or the carbon film or the oxide film or the titanium nitride as taught by Anno to the pressure side thread surfaces of one or both of said screw and said nut in the modified Yamamoto device, since the use thereof would provide an durable valve lash adjuster.

**6. Claims 4, 9, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Nakajima (as applied to claim 1 above), and further in view of Mizuno et al. (JP '938).**

The modified Yamamoto device, however, fails to disclose an alternative way of plating on one or both of said adjuster screw and said nut member, or on the pressure side thread surfaces of one or both of said screw and nut.

The patent to Mizuno on the other hand, teaches that it is conventional in the art of plating, to apply a plating film (9) composed of a Ni-P-PTFE plating and a Ni-P plating to at least a ball screw (5) and a nut (5b).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the Ni-P plating and the Ni-P-PTFE plating as taught by Mizuno to the pressure side thread surfaces of one or both of said screw and said nut in the modified Yamamoto device, since the use thereof would provide an durable valve lash adjuster.

**7. *Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Nakajima (as applied to claim 1 above), and further in view of Christini et al. (US Patent 3,936,577).***

The modified Yamamoto device, however, fails to disclose an alternative way of applying Ni-P plating and a hard particle-dispersed film on one or both of said adjuster screw and said nut member, or on the pressure side thread surfaces of one or both of said screw and nut.

The patent to Christini on the other hand, teaches that it is conventional in the art of particulate diamond deposition, to develop a composite deposition process by using a Ni-P plating with particulate diamond dispersed therein.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have applied the Ni-P plating with dispersed particulate diamond as taught by Christini to the pressure side thread surfaces of one or both of said screw and said nut in the modified Yamamoto device, since the use thereof would provide an durable valve lash adjuster.

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**8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Nakajima (as applied to claim 1 above), and further in view of Lust et al. (US Patent 6,592,356).**

The modified Yamamoto device, however, fails to disclose chrome nitride being formed on one or both of said adjuster screw and said nut member, or on the pressure side thread surfaces of one or both of said screw and nut.

The patent to Lust on the other hand, teaches that it is conventional in the molding art, to utilize the power inserts (24, 25) with a surface layer of chrome nitride.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the surface layer of chrome nitride as taught by Lust to the pressure side thread surfaces of one or both of said screw and said nut in the modified Yamamoto device, since the use thereof would provide an durable valve lash adjuster.

### **Conclusion**

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Yamamoto et al. (US Patent 6,729,288).
- Yamamoto et al. (US Patent 6,109,228).

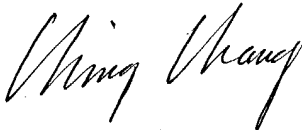
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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ching Chang whose telephone number is (703)306-3478. The examiner can normally be reached on M-Th, 7:00 AM -5:00 PM.

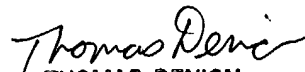
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703)308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner



Ching Chang



THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700